EXTECH INSTRUMENTS

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VERSION: 1.0

DATE: JUNE 1, 2005

S4500THS
USER GUIDE

"Make Mine an Extech!™"

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Provisional Declaration of Conformity

Name:	Extech Instruments Corporation
Manufacturer's Address	285 Bear Hill Road, Waltham, MA 02451, USA
Telephone:	+1 781 890 7440

Declares that the Product

Product Name:	Portable Receipt Printer
Model Number:	S4500THS;
Optionally Containing:	1) Bluetooth™ radio short range OEM module from connectBlue ab, cB-0701-01; FCC ID PVH 070101.Conforms to R&TTE Directives: 1999/5/EC (EN 300 328-2), 2) EMC Directive 89/336/EEC (EN 301 489-1 and -17); and Low Voltage Directive 73/23/EEC (EN 61131-2) 3) 802.11 Wi-Fi Module

Conforms to the following regulation and/or standards:

FCC: Part 15 Subpart B, Class B

CE: EN60950

CE: EN55022 Class B;

CE: EN61000-3-2;

CE: EN61000-3-3 ;

CE: EN50024.

Supplementary Information :

- The product complies with EMC Directive 89/336/EEC and Low Voltage Directive 73/23/EEC
- The product conforms to ANSI/UL STD 60950 & Certified to CAN/CSA STD C22.2 No. 60950-00
- CB Certified
- ETL Listed, control # 3046813
- IEC 68 certified
- IP54 certified

Place: Waltham, MA, USA

Date:

Signature:

Antony Revis, General Manager

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General Precautions

- Before using this product be sure to read through this manual. After reading please keep the manual in a safe place for future reference.
- The information contained herein is subject to change without notice of any type.
- Extech is not responsible for any operational results regardless of missing information, errors or any misprinting in this manual.
- Extech is not responsible for problems created as a result of using options and consumables not approved by them.
- This product is designed for servicing at an Authorized Service Center. Other than routine maintenance described in this manual the user should not attempt to repair, service or disassemble this product.
- Incorrect operation, handling or improper operating environments may cause damage or otherwise affect the proper operation of this product. Such actions invalidate the product warranty.

Safety

In this manual and on the Printer and accessories we make use of internationally recognized safety symbols as follows:

Caution! Refer to the explanation in this Manual

Caution! Risk of electric shock

Double Insulation or Reinforced insulation

DC, Direct Current or Voltage

AC+DC, Current or Voltage

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1. Getting Started

1.1 Unpacking the Printer:

The S4500THS portable printer is a full featured portable receipt printer designed for varied job environments including field service, field sales, hospitality and restaurants, ticketing and many others where point of service receipts are required. The package contains:

- **Printer:**
- **Battery Cartridge,**
- **AC input, DC output wall mounted charger (may be USA, European or UK style plug) for charging the battery inside the printer**
- **Belt loop system and**
- **Roll of paper supply (already loaded in the printer).**

Both cabled and wireless communication is possible.

1.1.1 OVERVIEW:

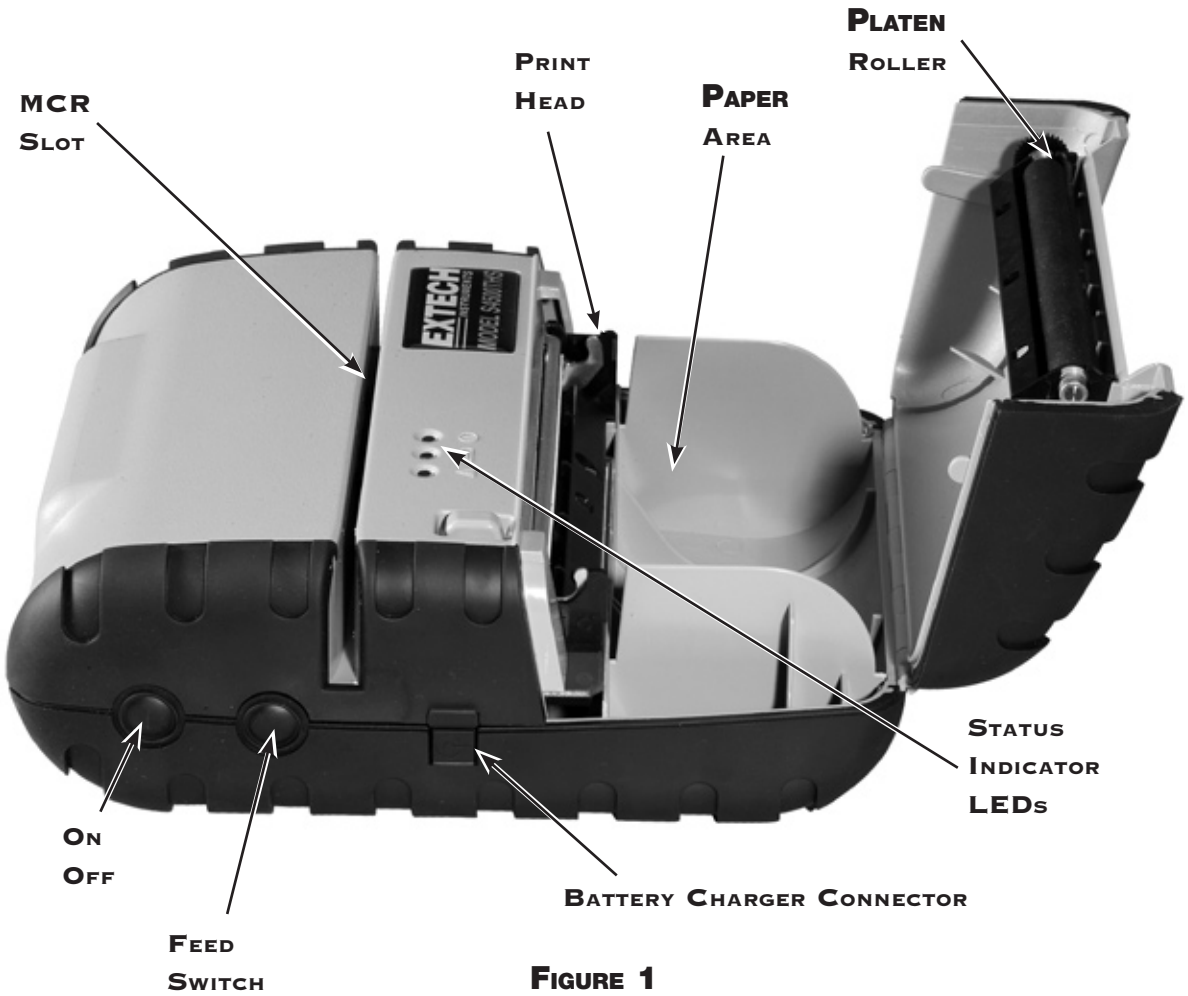

Figure 1
Operator Controls

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1.2 Installing and Charging the Battery Cartridge:

♦ Note: One battery cartridge is included with the printer. Similar to a cordless phone battery, the printer's battery must be charged before using it.

⚠	Extech batteries must be cycled several times to achieve maximum capacity. To cycle a battery fully charge it and then allow full discharge through normal use in the printer.

1.2.1: Installing the battery

Note: Refer to Figure 2 below to install the battery pack in the printer.

- Unlock the battery door by sliding the battery door locking tab down
- Open the battery door
- Insert the battery as shown. The battery side with two contact terminals should be facing down to make contact with the two spring probes inside the battery compartment.
- Close the battery door.
- Lock the battery door by sliding the battery door locking tab up

Figure 2 - Installing the Battery Cartridge

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1.2.2 Charging the Battery

- Press the On/Off switch until all LED indicators are OFF.
- Charge the battery by inserting the wall mounted charger line cord into the printer jack. Then insert the charger plug into an appropriate wall socket.
- The Yellow/Amber charging LED will illuminate indicating that the battery is being charged
- The battery will be fast charged and after about 180 minutes the LED will go off
- To remove the battery cartridge, open the battery door and tip the battery out of the printer.
  - ♦ Note: To ensure a full charge do not operate the printer while charging.
  - ♦ Note: The wall mounted charger is a Class II equipment (⧈). Multiple plug configurations comply with most international standards.

	S4500THS
Input Voltage/Current	100-240 VAC/0.5A
Input Frequency	47-63 Hz
Output Voltage/Current (⎓)	10VDC/1.4A
Note: The wall mounted charger is not supplied with plugs for use in Korea.	

	Do not use a charger not approved by Extech for use with the S4500THS. Use of an unapproved charger could damage the battery pack or the printer and will void the warranty.
	The battery terminals are well recessed inside the printer. Do not allow them to contact conductive material since this may create a short circuit which could cause injury or start a fire.
	When using the wall mounted charger ensure the socket outlet is close to the printer and easily accessible during the battery recharging process. Either switch the socket off (if supplied with a socket switch) or pull out the charger from the socket or disconnect the plug from the printer in the event of any problems.

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1.3 Reading the LED Status

The illustration below points out the location of the LED indicators described in Table 1.

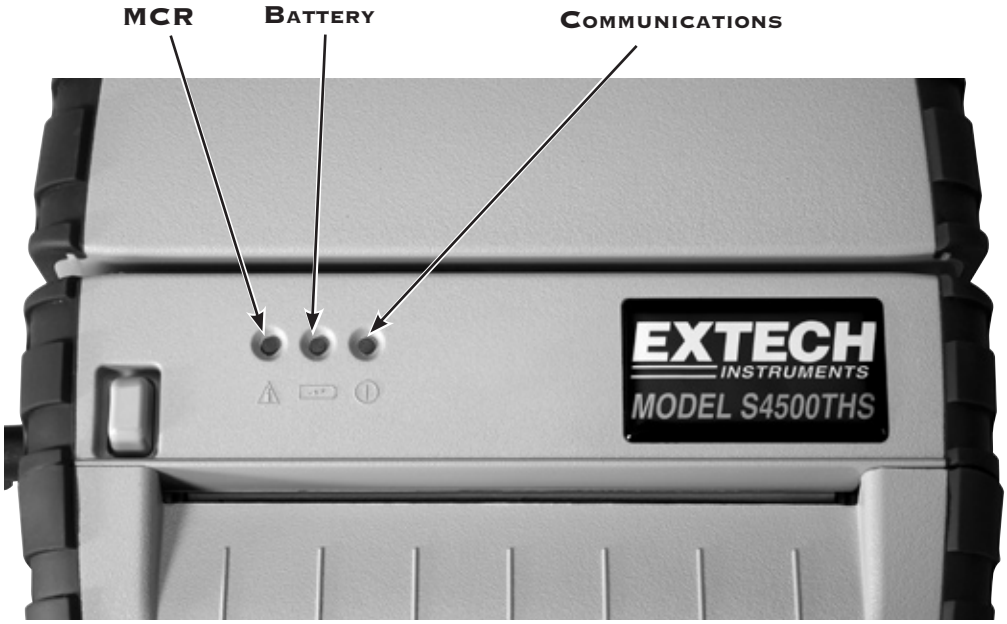

Figure 3 - LED Indicator locations

This table explains the LED indicator status. Refer to Figure 1 for the locations described for ON/OFF and FEED pushbutton switches and AC adaptor socket.

Tabel 1 - Reading the LED Status

LED	State	Status
Communication Status LED # 1	On - Green	Flashing Green, indicates that Power is ON and that the printer is in RS232 or IrDA mode.
		Steady GREEN state when communicating with host.
	On - Blue	Flashing Blue, indicates that Power is ON and that the printer is in Bluetooth mode.
		Steady Blue state during transmit/receive.
	On - Orange	Flashing Orange, it indicates the power is ON and that the printer is in 802.11b mode.
		Steady Orange state during transmit/receive.
Battery LED # 2	On - Yellow	The battery charger is charging the battery at a fast rate. The LED will turn off when the battery is fully charged
	On - Red	The battery voltage is low and needs charging
Magnetic Card Reader (MCR) Status LED # 3	On - Green	• Indicates that MCR is ready to accept data. • Indicates that SCR is ready to accept data.
	On - Red	• Steady Red, indicates an MCR/SCR fault condition or a printer error. The printer is not ready to accept data. • Printer is out-of-paper or Paper door is open. • Flashing Red, indicates the printhead is hot and printing is paused.

♦ **Note: Refer to the troubleshooting guide to determine error or fault condition.**

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1.4 Attaching Belt Loop System:

The belt loop system consists of two parts:

- **A knob located on the back part of the printer just above the battery door**
- **A strap with click on connector**

To attach the strap to the knob insert the knob located at the bottom of the printer into the slot of the connector. Pull down until you hear a click. The printer is now secure. The loop is then placed over your belt. Allow the printer to hang down to either the left or right hip.

- **To release the printer, press in on the two latches on the connector and pull the knob clear of the slot.**
  - ♦ **Note: Do not force or pull the printer from the connector without pressing in on the two latches**

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2. Loading Supplies

2.1 Adding Paper/Labels:

Open Paper Door

Figure 3A

Install Paper Roll

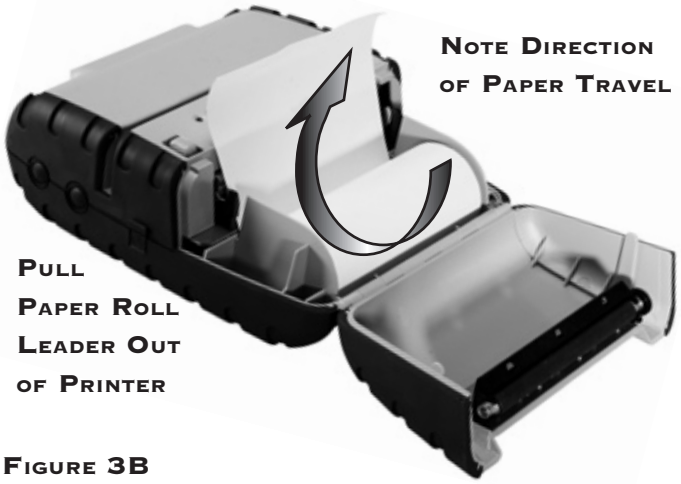

Figure 3B

Close Paper Door

Figure 3C

The printer can print text, bar codes and graphics on thermal receipt paper. See "Supply Specifications" for the width, thickness requirements and approved vendors.
Follow these steps to load printer paper.

- Open the paper door by pressing the Paper Door Unlock Button on the top cover as indicated in Figure 3A.
- Place the paper supply roll into the paper supply well. Make sure the paper supply unwinds from the bottom as shown in Figure 3B.
- Position the paper supply between the print head guides.
- Make sure some supply (2-3 inches) extends beyond the top of the paper supply well.
- Close the paper door and press close as shown in Figure 3C.

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2.2 Tearing Paper:

The printer's paper door acts as a tear bar. Pull one edge of the paper against the tear bar as indicated, then tear down and across against the tear bar to tear the paper.

- ♦ **Caution: The tear bar may have sharp edges.**
- ♦ **Using the tear bar is the only way to tear the paper.**
- ♦ **Pulling up and pulling sideways without using the tear bar can cause a paper jam due to paper misalignment in the print head mechanism**

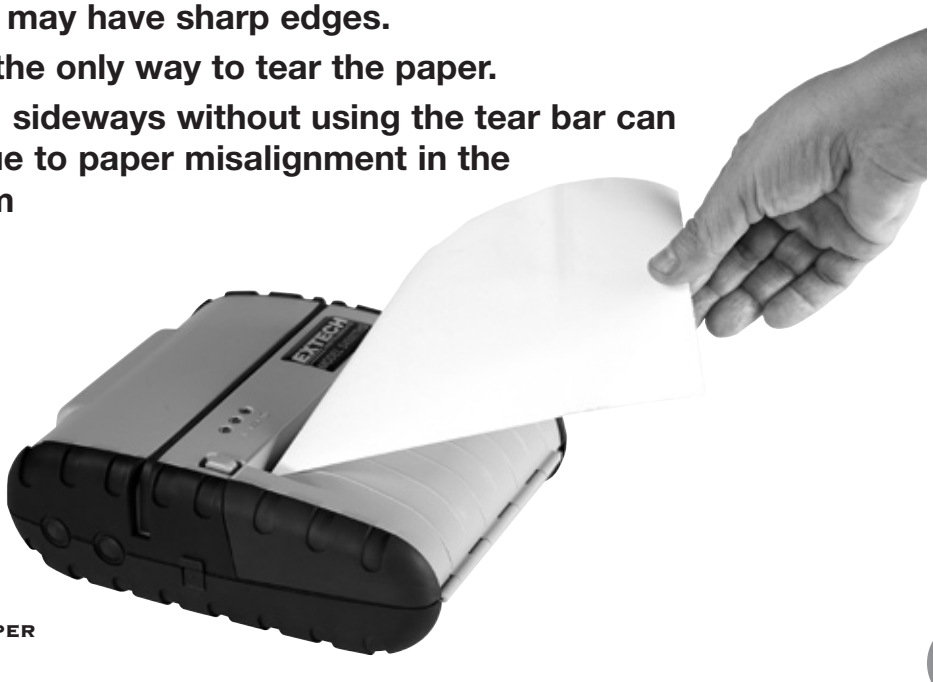

Figure 4: Tearing Paper

3. Using the Printer

3.1 Initial power up and self-test

Once the Battery is charged and the paper is loaded perform a self-test:

- ■ **Press the <On/Off> switch once. This turns printer on. LED #1 illuminates in green, blue or orange depending on the mode of communication.**
- ♦ **The printer will stay ON until it is manually tuned OFF.**
- ♦ **If the printer is set for infrared communications (IrDA) mode the printer will stay on all the time. Pressing the <On/Off> switch again will turn the printer off.**
- ■ **Press the <On/Off> switch to turn the printer off. The LED turns off.**
- ■ **To start the self-test, press and hold the <FEED> switch then press the <On/Off> switch**
- ■ **The printer starts to print the self-test message. Release the <FEED> switch.**
- ♦ **Press the <On/Off> or <FEED> switch to cancel the self-test print.**
- ♦ **The first few lines of self-test Figure 5 show the printer firmware version, the current printer settings (for example IrDA or Serial mode) and a list of any optional or special features installed.**

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FIGURE 5 – SAMPLE SELF TEST

FIGURE 6: DIP SWITCH LOCATION

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3.2 CONNECTING THE PRINTER

- The S4500THS printer supports Serial RS232 and IrDA compatible infrared communication interfaces. Radio frequency (RF) Bluetooth communication is available as an optional feature as well as 802.11b interface.
- Serial, IrDA, Bluetooth and 802.11b communication settings can be changed via a DIP switch located on the control card.
- The DIP switch is located inside the battery compartment as illustrated above indicating the location of this switch. Figure 6 shows the DIP switch location.
- The functions assigned to these switches are shown in Table 2.
- If the Serial interface is selected, the communication Parameters, Baud rate, Data Bit and Parity must be set.
  - ♦ Note: Optional serial cable is available for Serial RS232 communication (part # 5892RJD9).
- Printer drivers for Windows 95/98/NT/2000 and XP are available from Extech.
- Printer CE print Control utility is available from Extech for Windows CE devices.
- Printboy Print Utility from Bachmann Software or PalmPrint Utility, from StevensCreek, are recommended for Palm Pilot devices

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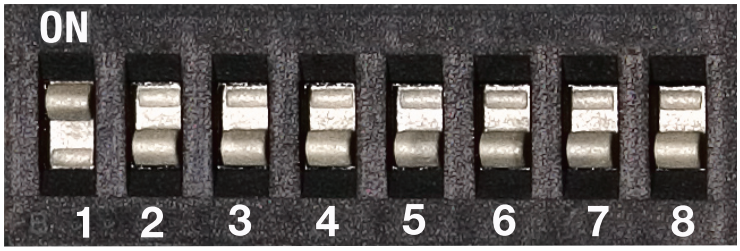
3.2.2 Setting Dip Switches



EXAMPLE: Dip Switch #1 shown in ON position

♦ **Note: Be careful when changing dip switch settings. Carefully use a pointer on the dip switch you are going to change. DO NOT use a screw driver or apply excessive force.**

3.2.3 Dip Switch Functions

♦ **Note: (Developer's refer to Programming Manual for more information)**

Dip Switch	Function	Switch	Switch	Switch	LED Indication
1 & 2	Communication Interface	SW1	SW2		
	RS 232	Off	Off		Flashing Green
	IrDA	On	Off		Flashing Green
	Bluetooth	Off	On		Flashing Blue
	802.11b	On	On		Flashing Orange
3, 4 & 5	Baud Rate	SW3	SW4	SW5	
	115200	Off	Off	Off	
	57600	On	Off	Off	
	38400	Off	On	Off	
	19200	On	On	Off	
	14400	Off	Off	On	
	9600	On	Off	On	
	2400	Off	On	On	
	1200	On	On	On	
6	Parity Bit	SW6			
	Parity Enabled	On			
	Parity Disabled	Off			
7	Odd/Even	SW7			
	Odd Parity	On			
	Even Parity	Off			
8	Auto Power Save	SW8			
	Power save disabled	On			
	Power save enabled	Off			

Table 2 – DIP Switch Setting

Please note: In order for changes to the dip switch configuration to take effect, the printer power must be reset. This action occurs automatically when the battery is removed to gain access to the dip switches.

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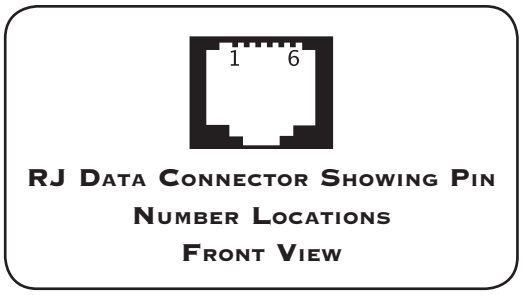
3.3 Communications:

The S4500THS Printer is able to support two modes of communication simultaneously – Either RS232 and IrDA (If Dip switch # 1 is ON) or RS232 and 802.11b or Bluetooth (If Dip switch # 1 is OFF and Dip Switch # 2 is ON).
Dip Switch # 2 is used to control the RS232 Port. If the Switch is turned ON the RS232 port is disabled and if it is turned OFF the RS232 Port is enabled. If RS232 interface is not required, disabling the port will save battery power.
Bluetooth or 802.11b RF communication is available if optional daughter boards are installed (802.11b). The printer can have either Bluetooth or 802.11b enabled but not both of them at the same time.

3.3.1 Serial Communications specification:

- **The RS232C Interface signals for the S4500THS Series printers are terminated on a 6 PIN RJ type data connector located on the side of the printer.**
- **Six connections are provided from the Serial Interface to the host computer. The TABLE 3 below lists the Serial Interface signals and pin outs on the RJ connector and the connector pin locations are shown in FIGURE 7.**
- **A minimum of two connections are required for operation: RXD – pin 3 and Common – pin 1**
- **The communication Parameters: Baud rate, Data Bit and Parity must be set same as the host device settings.**



RJ Data Connector Showing Pin Number Locations
Front View

Figure 7 - RJ Data Connector

RJ25 Connector Pin Number	Functional Description	Signal Name
3	RS232 from Host (INPUT)	RXD
2	RS232 from Printer (OUTPUT)	TXD
6	Request to send from Host (INPUT)	RTS
4	Clear to from Printer (OUTPUT)	CTS
1,5	Logic common	COM

Table 3 - 4500THS Printers' Serial RS232C Interface Signals

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3.4 Infrared Communications Mode (IrDA Only) :

- Dip Switch # 1 must be in the <ON> position.
- The printer can be powered up by pressing the power <On/Off> switch
- If no IrDA connection is made, the printer will automatically power down to a lower power level to conserve battery life. It will remain in a "sleep" mode until an IrDA connection is made, at which time the printer will "wake" up and print the requested data
- Pressing the power switch again will turn the printer <OFF>.

3.5 Bluetooth/802.11b Communications Only :

- Bluetooth operation: Dip Switch #1 must be in the OFF position. Dip Switch # 2 must be in the ON position.
- 802.11b operation: Dip Switch #1 and #2 must be in the ON position.
  - ♦ Note: Adjust baud rate settings to match those of the BT or 802.11b module in your computing device
- The printer can be powered up by pressing the power <On/Off> switch
- Pressing the power <On/Off> switch again will turn the printer <OFF>.
  - ♦ Note: It is necessary for the mobile computing device you are using to discover the printer. Refer to the instructions provided by the systems integrator.
  - ♦ Note: Systems Integrators: Refer to the Bluetooth manual provided with your mobile computer and the Bluetooth section of the Developer's Manual/802.11b Application Note available for this printer.

3.6 Using the Magnetic Stripe Reader:

- The Magnetic Card Reader is a factory-installed option. This option requires special application software to read and process cards with a magnetic stripe, such as credit cards or driver's license
  - ♦ Note: Refer to the Figure 8 if your printer is equipped with the optional magnetic stripe reader
- Quickly swipe the card through the reader either left to right or right to left. The magnetic stripe must be facing toward the paper supply door as indicated below while it is passed through the reader
- Refer to Table 4 for the description of the LED indicator Status.

LED indicator	State	Status
Green	ON	Ready/waiting for card to be swiped Good swipe - Card data read
	OFF	Card not ready to be swiped
Red	ON	Error reading card's data

Table 4 - Magnetic Card LED Indicator

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FIGURE 8: USING THE MAGNETIC CARD READER

3.7 PROGRAMMING INFORMATION:

This section lists the printer control commands strings.

- System Developers: Please refer to S4500THS programmer's manual for further details.
- Other features may be available and are described in the programmer's manual

3.7.1 ASCII CONTROL CHARACTERS:

Character	Hex/Dec	CONTROL ACTION
EOT	04/04	End Of Text
BS	08/08	Back Space
HT	09/09	Horizontal Tab
LF	0A/10	Line Feed
VT	0B/11	Vertical Tab
FF	0C/12	Form Feed
CR	0D/13	Carriage Return
SO	0E/14	Shift Out
SI	0F/15	Shift In
XON	11/17	Transmitter On
AUXON	12/18	Printer on
XOFF	13/19	Printer receiver is off
NORM	14/20	Return to default 42 column mode
AUXOFF	15/21	Printer to Host: printer is off
CANCEL	18/24	Cancel and reset printer BUFFER
ESC	1B/27	Escape
EXTEND	1C/28	Extended print
EXTEND OFF	1D/29	Extended print off/Normal print

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3.7.2 Printer Font Commands – Courier Character Set:

Font Name	Character size (W x H)	Command String
24 CPI normal	8x23	ESC+'k'+'5'
21 CPI normal	9x23	ESC+'k'+'4'
19 CPI normal	10x23	ESC+'k'+'3'
16 CPI normal	12x23	ESC+'k'+'2'
12 CPI normal	16x23	ESC+'k'+'1'
13 CPI rotated	14x16	ESC+'k'+'0'

3.7.3 Printer Font Commands:

Command String	Printer Action
ESC - 'F' – 1	Selects International character set
ESC - 'F' – 2	Selects PC Line Draw character set
ESC - 'U' - '1'	Enable emphasized print.
ESC - 'U' - '0'	Disable emphasized print.

3.7.4 Printer Graphic Commands:

Command String	Printer Action
ESC - 'a' – n	Select dot line spacing between printed lines.
ESC - 'J' – n	Graphic Line Feed command
ESC - 'P' - '#'	Select Online mode, characters printed as received.
ESC - 'P' - '$'	Select Buffer mode, characters are printed on (^ D)
ESC - 'V' - n1 – n2	8-bit Graphic command
ESC - 'v' - n1 – n2	RLE Compressed Graphic command

3.7.5 Magnetic Card Reader Control Commands:

Command String	Printer Action
ESC - 'M' - 'nnm' - Cr	Select MCR with (nn) auto timeout
ESC – 'C'	Cancel MCR read process

3.7.5.1 Smart Card Reader Control Commands (when SCR is installed):

Command String	Printer Action
ESC - 'M' - 'nn' - '7'- Cr	Select SCR in direct mode with Serial RS232. (nn) is the auto timeout of the SCR.
ESC - 'M' - 'nn' - '8'- Cr	Select SCR in PassThru mode with BT/802.11 or IrDA on. (nn) is the auto timeout of the SCR.

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3.7.6 Graphic Logo and Bar code commands:

Command String	Printer Action
ESC – L – G – n	Prepare printer to load image:
ESC – G - 0x0FF	Loading Logo Complete:
ESC – L – g – n	Print stored logo image:
ESC - 'z' - n1 – n2 - L - [data]	Print Bar Code without visible text
ESC - 'Z' - n1 – n2 - L - [data]	Print Bar Code with visible text
ESC - 'Q' - 'J' – n	Reverse Dot Feed
ESC - 'Q' - 'Q' – n	Set Out of Paper Sensitivity
ESC - 'Q' - 'F' – m	Set Forward Black Mark Seek
ESC - 'Q' - 'B' – m	Reverse Black Mark Seek

3.7.7 Printer Supervisory and Control Commands:

Command String	Printer Action
^V	Buffer, power timer & battery status:
^B	Buffer status
ESC - 'P' –'^'	Print Battery Voltage
ESC – 'M' - '000' - Cr	Disable the power down timer
ESC - 'M' - 'nn0' - Cr	Sets the power down timer to nn seconds
ESC – 'M' - 'C'	Reset Auto power down to 20 seconds
ESC – 'P' – '('	Firmware version query
ESC – ' P' - ')'	Hardware model query:
ESC – ' P' - '+' or '-'	Enable or Disable EOT printer response

Resident Character Sets (characters 32 through 255):

International Character Set

PC Line Draw Character Set

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4. Printer Maintenance

4.1 Cleaning:

You may need to clean the print head and platen roller after printing a number of rolls of paper, whenever you load new supplies or when you see voids in the printout.

Caution: Do not use sharp objects to clean the print head. This may damage the printer and require service.

- **Open the paper door by pressing the Paper Door Unlock Button on the top cover as shown in Figure 3A. The paper supply door will pop up.**
- **Remove the paper roll.**
- **Moisten a cotton swab with isopropyl alcohol and clean the print head**
- **Clean the platen roller with a dry cloth or small brush**
  - ♦ Note: You can also use another cotton swab moistened with isopropyl alcohol. Turn the platen roller with your finger and run the cotton swab or dry cloth across it. Make sure the platen roller is clean all the way around.
- **Moisten another cotton swab with isopropyl alcohol. Rub the swab across the black mark sensor to remove any build-up**
- **Moisten another cotton swab and rub the swab across the tear bar to remove any build-up**
  - ♦ Note: You may experience dust build-up depending on the environment and the quality of the paper supply you use. If this occurs, use a can of compressed air to blow dust and paper debris out of the printer.

4.2 Charging the Printer Battery:

The printer battery is charged using the wall mounted charger provided. Follow these steps to charge the battery pack.

- ♦ Note: Maker sure the printer and all LED's are OFF before charging battery.

- **Plug the charger into an appropriate wall socket; then plug the charger line cord into the adapter jack on the side of the printer (see Figure 1)**
- **The yellow CHARGE LED will illuminate, to indicate battery is charging.**
- **The Charge LED turns off when battery cartridge is fully charged. It takes about 180 minutes to fast charge the battery cartridge**
- **To insure full charge, printer should not be operated while the battery is charging.**

4.2.1 Important Notes on Charging Batteries

- ♦ The model S4500THS printers require an adaptor output of 10VDC/1.4A.
- ♦ The battery Fast-charge is initiated each time the power adapter is connected to the printer
- ♦ The fast-charge controller checks the battery's voltage and temperature, before the start of the fast recharge process. If the battery voltage or the temperature is outside of the fast-charge limits, the charger defaults to trickle charge at C/10 or 70 mA rate
- ♦ Optional external battery chargers are available for Extech batteries.

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4.2.2 Important Notes on Replacing Batteries

- Check for the correct Extech part number for the battery and only order that part for your new battery

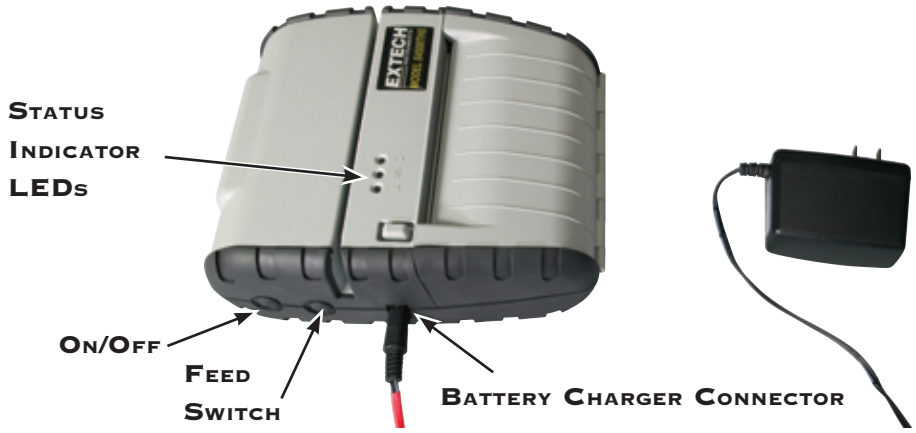
⚠ Caution: Risk of explosion if battery is replaced by an incorrect type.

⚠ Caution: Dispose of used batteries according to instructions in Section 4.5.

4.3 Verifying Battery Charge State:

It is strongly recommended testing your printer before returning to Extech. Follow these steps to identify and correct any battery power problem that may be encountered. These will help to identify that the fault is with the printer and not some other part of your system.

- To test the AC adaptor use a multi-meter and measure the output. Output should be 10VDC
- Press the <ON/OFF> switch and wait until all LED's are off
- Insert the AC adaptor plug into the printer. If the amber LED goes on, the battery is not fully charged but the charging circuit is functioning.
  - ♦ The AC power portion of the circuit appears ok
- Disconnect the AC Adapter once the battery has charged for approximately 5 minutes.
- Press and hold the <FEED> switch, then press and release the <ON/OFF> switch. The printer will print a "self test" receipt
  - ♦ If the self test receipt is printed, the DC power is ok
- Press <ON/OFF> switch and wait until all LED's are off
- Plug the AC adaptor into the printer. Press <ON>; the green LED is illuminated when in RS232 mode and after approximately 1 1/2 minutes, the LED should go off.
- If the amber LED is on, this will continue on through this test indicating that the battery is accepting a charge and that the charge circuit is ok. At the end of a 180 minute charge cycle the amber LED will go off.



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4.4 Battery and Safety Information:

The printer is powered by a 7.4V Li-Ion battery cartridge.

- **Charging time in the printer is approximately 3.0 hours.**
- **Take the battery out of printer if storing the printer for long periods of time.**
- **The battery storage temperature is 40°F to 104°F (4°C to 40°C). Do not store a fully charged battery at temperatures greater than 104°F (40°C) for long periods of time – the battery may permanently lose charge capacity.**
- **Be sure to use a fully charged battery before long or battery intensive printing sessions. Certain operations (for example, printing receipts with a lot of bar codes and graphics) drain the battery more quickly than others.**
- **Dispose according to your local regulations. Do not throw in trash.**

Caution: Do not disassemble, short circuit, heat above 80°C, or incinerate. The battery may explode.

- **The recommended temperature for charging is between 68°F (20°C) to 77°F (25°C).**

4.5 Recycling your Batteries:

The Rechargeable Battery Recycling Corporation (RBRC) is a non-profit organization created to promote recycling of rechargeable batteries. For more information about how to recycle batteries in your area, visit www.rbrc.org.

4.6 Trouble Shooting:

Problem	Action
Does not feed paper or has a paper jam	•Remove any jammed supply •Reload paper supply.
Does not print	•Check or replace the printer's battery •Make sure the paper supply is loaded correctly, not backwards. •Verify communication between the host device and the printer by disconnecting the communication cable and performing a printer self test.
Light printing	•Check or recharge the battery •Adjust the print contrast through print application.
Voids in printing	•Clean the print head following the cleaning instruction listed in Cleaning section.
Red (Error) LED on	•Check that paper roll is not out and paper door is closed. •Error reading MCR. •After extended printing, print head may be hot; printer will pause before resuming printing.

If the problem is not identified following above trouble shooting guide, contact Extech Technical Support. Support numbers and Email addresses are listed at www.Extech.com.

Other than routine cleaning and other maintenance described in Section 4, the printer is not intended to be serviced by the user. It must be returned to an authorized service center. Under no circumstances should the user attempt to take the printer apart.

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4.7 Printer Supplies:

Part Number	Description
757064	S4500THS Thermal paper pack (4" / 100', 5 rolls)
78628I1	S4500THS PKG 120v (US Plug)
78628I2	S4500THS PKG 220v (EURO Plug)
78628I4	S4500THS PKG 120v (UK Plug)
78628I1R	S4500THS MCR PKG 120v (US Plug)
7A1000014	Li-Ion Battery Cartridge: 7.4VDC – 2200 mAH
157120	Battery charger adapter Input 120VAC/Output 10VDC @ 1.4A (US Plug)
157220	Battery charger adapter Input 220VAC/ Output 10VDC @ 1.4A (Euro Plug)
157240	Battery charger adapter Input 240VAC/ Output 10VDC @ 1.4A (UK Plug)
S4500THSUG	S4500THS User's Guide
S4500THSPG	S4500THS Programmer's Guide
Available from Extech Email: **printers@extech.com**	Windows 95/98/NT/2000/ Drivers
Download **http://www.fieldsoftware.com/PrinterCE.htm**	Windows CE print Utility
Download **http://www.stevenscreek.com/pilot/dodownload.html**	Palm Pilot print Utility
756998	Belt Loop System
5892RJD9	Serial Data Cable – RJ to DB9 PC compatible

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5 Specifications

5.1 Printer Specifications:

Height	2.5 inches (64mm)
Width	6.5 inches (167mm)
Length	7.5 inches (192mm)
Weight: w/battery & supply	1.8 lbs. (850g)
Shipping weight:	3.3 lbs. (1.5kg)
Power	7.4 V Li-Ion battery
Operating Temp. Limits:	14 to 122°F (-10 to 50°C)
Storage Temp. Limits:	-4 to 140°F (-20C to 60°C)
Operating Humidity Limits:	20% to 85% non-condensing
Storage Humidity Limits:	5% to 95% non-condensing
Print Width:	4 inches wide (104mm) 203 dpi (8 dots per mm)
Printing Method:	Thermal Direct
Print Speed:	Up to 3.0 inches/sec. @ 7.2v to ph.
Supported Fonts: (Bitmap)	Standard (normal and bold) Large (normal) Reduced (normal and bold) Large rotated.
Supported Bar Codes:	Codabar, Code 39, UCC/EAN – 128, UPC/EAN/JAN, Interleaved 2 of 5, Code 128
Memory:	2M Flash 768K SRAM — (256K int. – 512K ext.)
Charging Time:	Approximately 180 minutes
Communications:	RS-232, IrDA, Bluetooth, 802.11b
Print Ratio:	25% black maximum/sq.in.

5.2 Supply Specifications:

Supplies:	Thermal direct receipt paper
Supply Thickness:	2.2 to 3.5 mils (receipt paper)
Supply Width:	4.33 inches (110mm)
Supply Length:	1 roll of receipt paper is ~100 ft. (30km.)
Supply Sensing:	Black mark (on face of supply)
Paper roll diameter:	Outside: 2.0 inches (51 mm) Inside: 0.40 inches (10 mm)
Approved Vendors	Kansaki: P300, P310, P350, P354, P390, P530UV, TO281CA, OP200, TO381N, F180, F380, F550 Jujo: TF-50KS-E2C Honshu: FH65BV-3

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5.3 Regulatory Notes:

5.3.1 FCC Part 15 Class B

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- **Reorient or relocate the receiving antenna.**
- **Increase the separation between the equipment and the receiver.**
- **Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.**
- **Consult the dealer or an experienced radio/TV technician for help.**

Note: For Bluetooth equipped printers please note:

- **The printer contains an OEM Serial Port Adapter from connectBlue with FCC ID: PVH070101. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:**

(1) this device may not cause harmful interference,

(2) this device must accept any interference received, including interference that may cause undesired operation."

5.3.2 Warranty:

This printer is warranted by Extech Data Systems to be free of defects in parts and workmanship for a period of one year from date of shipment. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties of merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, special, incidental or consequential damages. Extech's total liability is limited to the repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral is expressed or implied.

5.3.3 Warranty and/or Repair Service:

A Return Authorization number must be issued before a unit is returned to Extech for repair. Once a unit has been properly returned to Extech (Note: The customer is responsible for ensuring proper packing to prevent damage in transit as well as the shipping costs back to Extech), it will be repaired (estimates are provided first if the repair cost is estimated above $100.00) and returned via UPS ground. The customer may elect a faster mode of transport at their cost.

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